SCIENCE

◈ AP BIOLOGY ..... (11th-12th) 6021

Recommended Preparation: B or better in Biology; B or better in Chemistry
DESCRIPTION: This is a rigorous one-year lecture/laboratory course taught with college level text materials. It will present an in-depth study of biology in the following subject areas: (1) molecular and cellular biology, (2) organism biology, and (3) population biology. Laboratory exercises are included in the program in after-school sessions. All students are expected to take the AP exam in May. This course fulfills the BOHS life science requirement.
MEETS COLLEGE REQUIREMENT? ..... Yes (d)

◈ AP CHEMISTRY ..... (11th-12th) 6035

Recommended Preparation: Algebra 2 and Chemistry; Honors Biology, Honors Chemistry & Honors Physics preferred
DESCRIPTION: The major emphasis of this course is to study chemistry as an intellectual activity and as training in fundamentals needed for future work in science. There are 10 three-hour labs scheduled in the evening. All students are expected to take the AP exam in May. This course fulfills the BOHS physical science requirement.
MEETS COLLEGE REQUIREMENT? ..... Yes (d)

◈ AP ENVIRONMENTAL SCIENCE ..... (11th-12th) 6065

Recommended Preparation: Honors Biology and Honors Chemistry
DESCRIPTION: This is a rigorous one-year lecture/laboratory/discussion course taught with college level text materials. Student will be expected to blend material from the sciences and the social sciences into a unified conceptual understanding of the major concepts of environmental science. The course will concentrate on environmental principles, studies of population dynamics, investigations of resource utilization patterns, and predictions of future trends. All students are expected to take the AP exam in May.
MEETS COLLEGE REQUIREMENT? ..... Yes (d)

◈ AP PHYSICS B ..... (11th-12th) 6047

Recommended Preparation: Honors Biology, Honors Chemistry, Physics; proficient or advanced scores on science and math CSTs; completion or enrollment in Pre-calculus
DESCRIPTION: This is a year- long, college-level, algebra & trigonometry-based course covering topics including: Newtonian Mechanics, Fluid Mechanics & Thermal Physics, Electricity & Magnetism, Waves & Optics, and Atomic & Nuclear Physics. One goal of the course is to develop skills in applying physics principles and algebraic techniques to solve problems in classical and modern physics. Another goal is to provide college-style lab experiences that foster skills in making observations, forming hypotheses, developing procedures for collecting and analyzing data, and forming conclusions. To this end, there will be nine, 3-hour experiments to be done after school. Several smaller experiments will be done in class throughout the year. This course is recommended for hard-working students who plan to attend college and study medicine or science. All students are expected to take the AP exam in May.
MEETS COLLEGE REQUIREMENT? ..... Yes (d)
NOTE: As of 2014-2015, this course is now offered as AP Physics 1 and AP Physics 2, as revised by College Board.

◈ AP PHYSICS 1 ..... (11th-12th) 6048

Recommended Preparation: *Completed enrollment in Algebra 2; Biology, Chemistry, Algebra 2, and Geometry = C or better; Algebra 2 Benchmark Tests*
DESCRIPTION: This course is based upon the College Board's Advanced Placement curriculum. AP Physics 1 is an algebra-based, introductory college-level physics course that explores topics such as Newtonian Mechanics (including rotational motion); work, energy, and power; mechanical waves and sound; and introductory, simple circuits. Through inquiry-based learning, students will develop scientific critical thinking and reasoning skills.
MEETS COLLEGE REQUIREMENT? ..... Yes (d)

◈ AP PHYSICS 2 ..... (11th-12th) 6049

Recommended Preparation: *Completed enrollment in AP Physics 1 and FST or Honors Pre-Calculus; Biology, Chemistry, AP Physics 1, Algebra 2, and FST or Honors Pre-Calculus = C or better; FST or Honors Pre-Calculus Benchmark Tests*
DESCRIPTION: This course is based upon the College Board's Advanced Placement curriculum. AP Physics 2 is an algebra-based, introductory college-level physics course that explores topics such as fluid statics and dynamics; thermodynamics with kinetic theory; PV diagrams and probability; electrostatics; electrical circuits with capacitors; magnetic

fields; electromagnetism; physical and geometric optics; and quantum, atomic, and nuclear physics. Through inquiry-based learning, students will develop scientific critical thinking and reasoning skills.
MEETS COLLEGE REQUIREMENT? ..... Yes (d)

◈ AP PHYSICS C ..... (11th-12th) 6051

Recommended Preparation: Honors Biology, Honors Chemistry and AP Physics 1; completion or enrollment in AP Calculus AB or BC
DESCRIPTION: This course fills the second semester of a year-long course in Advanced Placement Physics C. It is a college-level, calculus-based course covering topics in electricity and magnetism. One goal of the course is to develop student's abilities to use physics principles and various mathematical techniques to solve problems in electricity and magnetism. Another goal is to provide college-style lab experiences that foster skills in making observations, forming hypotheses, developing procedures for collecting and analyzing data, and forming conclusions. To this end, there will be five, 3-hour experiments to be done outside of regular school hours. This course is recommended for mathematically deft, hard-working students who plan to attend college and study engineering or physics. All students are expected to take the AP exam in May.
MEETS COLLEGE REQUIREMENT? ..... Yes (d)

BIOLOGY ..... (9th-12th) 6011

DESCRIPTION: Study of the biosphere, stressing the similarities, differences, genetic continuity and interaction of all forms of life in relation to the non-living environment, building from a thematic base. Extensive laboratory work gives the student the fullest possible insight into the investigative process of biology. This course fulfills the BOHS life science requirement.
MEETS COLLEGE REQUIREMENT? ..... Yes (d)

BIOLOGY (H) ..... (9th-10th) 6015

Recommended Preparation: C or better in Algebra 1
DESCRIPTION: Theoretical and molecular approach to the study of life and life processes emphasizing its diversity (kingdoms and classification) to its unity (cells and molecules.) Processes such as reproduction, genetic inheritance, genes and chromosomes will be stressed. Extensive laboratory work will be patterned on the problem solving technique of the scientific method. This course fulfills the BOHS life science requirement.
MEETS COLLEGE REQUIREMENT? ..... Yes (d)

CHEMISTRY ..... (10th-12th) 6025

Recommended Preparation: C or better in Geometry; C or better in Biology; enrollment Algebra 2
DESCRIPTION: Study includes development of basic models and theories: gases, condensed phases of matter, liquids and solids, chemical reactions and equilibrium, acid-base studies, tables, chemical bonding, organic chemistry, and descriptive chemistry. Strong emphasis is placed on the theoretical aspect of modern atomic structure theory. This course fulfills the BOHS physical science requirement.
MEETS COLLEGE REQUIREMENT? ..... Yes (d)

◈ CHEMISTRY (H) ..... (10th-12th) 6031

Recommended Preparation: B or better in Geometry; enrollment in Algebra 2; B or better in Biology <u>or</u> C or better in Honors Biology
DESCRIPTION: Same content as in Chemistry with additional opportunities for extension and enrichment of learning. Strong emphasis is also placed on problem solving skills. This course fulfills the BOHS physical science requirement.
MEETS COLLEGE REQUIREMENT? ..... Yes (d)

CONCEPTUAL PHYSICS..... (11th-12th) 6041

Recommended Preparation: Biology
DESCRIPTION: This course introduces students to the laws of physics (inertia, force and acceleration, action and reaction) and also includes the study of vectors, momentum, energy, gravity, waves and electricity. This course fulfills the BOHS physical science requirement.
MEETS COLLEGE REQUIREMENT? ..... Yes (g)

INTRO TO PHYSICAL SCIENCE (Earth Science) ..... (9th-12th) - 6003

DESCRIPTION: This class will introduce students to the fundamental concepts of physical science. Students will gain general knowledge in the four major areas of study of Geology, Astronomy, Oceanography and Meteorology. Students will also acquire an understanding of the composition of Earth and its internal processes; the evolution of land forms; the transfer of energy in Earth's atmosphere; patterns of change that cause weather; the interactions that occur among water, atmosphere and land; the scale and structure of stars; and the impact humans have on Earth's

resources. Hands-on activities for learning the processes that shape and mold Earth will be incorporated throughout the course.
MEETS COLLEGE REQUIREMENT? ..... Yes (g)